

COTTON WEED MANAGEMENT

Cotton Incorporated Project 00-789CA

RESEARCH PROGRESS REPORT 2006



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CI Project No. 00-789CA

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The overall objective of this continuing project is to develop cost effective weed management strategies that can be integrated into the California cotton production systems.

The specific objective is to develop effective control measures for difficult to control annual and perennial weeds including yellow and purple nutsedge, ivyleaf annual morningglory, and field bindweed. Other weed species to be evaluated include hairy and black nightshade, pigweed, lambsquarter, barnyardgrass, Chinese thornapple, groundcherry, velvetleaf, johnsongrass and Bermudagrass. Winter weeds in fallow bed control include annual bluegrass, barnyardgrass, mustards, nutsedge, swine cress and other broadleaves.

Fallow Bed Weed Control

Preplant cotton fallow bed herbicides were evaluated (30 treatments combinations) including Ignite, ET, Gramoxone Inteon, Direx, Layby Pro, Cotoran, Matrix, Chateau, Linex, Goal 4F, and 2,4-D. Most treatments gave excellent control of shepherd's purse and prickly lettuce. Volunteer wheat was controlled by treatment combinations that had Roundup, Gramoxone Inteon, or Ignite.

Herbicide Tolerant Cotton

Two Roundup Ready Flex crop safety trials were established and treated over the top at different timings. A formulation study was established evaluating 9 new formulations of glyphosate. Crop yield and final plant mapping were taken. No visible injury or yield loss was observed in either study. In the Roundup Ready Flex studies 100 percent control of black nightshade and pigweed was achieved. "Indicate" a ph reducing adjuvant improved control of field bindweed significantly compared to Roundup Weathermax + AMS. The best control of field bindweed was achieved with 2 applications of Roundup Weathermax + Indicate followed by an application of 40 oz. of Ignite as a hooded spray.

Results of the Liberty Link studies effectively controlled black nightshade and pigweed with one application of Ignite 280 at 40 oz per acre. Only fair control of johnsongrass was observed. Ignite by itself at 40 oz per acre, provided 75 percent suppression of field bindweed. Ignite also gave excellent control of ivyleaf annual morningglory. Under heavy weed pressure 2 to 3 applications were still needed to control each flush.

Post Directed Studies

Post-directed herbicide studies were extensive again this year. Several ivyleaf annual morningglory studies in Tulare County evaluated Chateau, ET, Shark, Ignite, and Envoke and were compared to standard directed spray herbicides Goal and Caparol along with several tank mix combinations. Control has been acceptable with all herbicides, when applied to small seedling weeds. Envoke, ET, Shark and combinations of Chateau with glyphosate provided improved control of ivyleaf annual morningglory compared to glyphosate alone under heavy weed populations. Control was equal under light populations.

“Indicate” was tank mixed with Chateau, Shark, ET, or Ignite. Results were variable. Another study evaluated Roundup Weather Max, Shark, or Ignite applied as a directed spray vs. a hooded spray at layby in Roundup Ready Flex cotton. Results showed a slight benefit to hooded sprayer applications.

A new formulation of Prism called “Prism Max” was compared to the old Prism, Fusilade, Poast, or Roundup for johnsongrass control. There were only minor differences between treatments.

Evaluation of various post emergence and post directed herbicides and combinations annual including:

Brand Name	Company
a. Roundup Weathermax (glyphosate)	Monsanto
b. Chateau (flumioxazine)	Valent
c. Envoke (trifoxysulfuron sodium)	Syngenta
d. Shark (carfentrazone)	FMC
e. ET (pyraflufen-ethyl)	Nichino
f. MON 79749	Monsanto
g. MON 79787	Monsanto
h. MON 79927	Monsanto
i. MON 79789	Monsanto
j. MON 79790	Monsanto
k. MON 79888	Monsanto
l. MON 79859	Monsanto
m. MON 79862	Monsanto
n. MON 79813	Monsanto
o. MON 79844	Monsanto
p. MON 79922	Monsanto
q. Ignite (glufosinate)	Bayer
r. Layby Pro (diuron + linuron)	Dupont
s. Indicate 5	J. R. Simplot
t. Direx (diuron)	Dupont
u. Touchdown Total (glyphosate)	Syngenta
v. Cotoran (fluometuron)	Syngenta
w. Goal Tender (oxyfluerfen)	Dow AgroSciences
x. Gramoxone Inteon (paraquat)	Syngenta
y. Matrix (rimsulfuron)	Dupont
x. Linex (linuron)	Dupont
z. Valor (flumioxazin)	Syngenta

Fallow Bed Herbicide Study 2006

UCCE - Tulare/Kings Co. & WSREC

Steve Wright, Lalo Banuelos, John Soares, Ed Scott, Rafael Solorio

The trial was conducted in Five Points in cooperation with the Westside Research and Extension Center. The trial was sprayed on March 1st to fallow ground with beds going into cotton. Indicate 5 at 3.38 oz was added to all treatments, except treatments with Matrix. Air temperature was at 65° F with wind factor at 0-3 mph. A 4-wheel quad sprayer was used with a volume of 15 gpa, speed of 3 mph, and pressure at 30 psi. 8002 flat fan nozzles were used as a broadcast. The plot size was 3-38 inch rows by 30 feet, with 3 replications. The weeds present at the time of application were prickly lettuce (½-4 inches tall/wide), shepherd's purse (½-4 inches tall/wide), volunteer wheat in the 2-8 tiller stage (3-6 inches tall), and a lightly scattered population of field bindweed.

The objective of this study was to evaluate new herbicide treatments for control of broadleaves and volunteer wheat. All treatments tank mixed with Gramoxone Inteon, Ignite, or glyphosate showed the best results, controlling volunteer wheat, prickly lettuce, and sheperds' purse.

Table 1.

Volunteer Wheat Percent Control				
Treatments	Rate pr/A	8 DAT	15 DAT	20 DAT
1. Gramoxone Inteon + Agridex	21 oz + 1.2 pt	80	93	97
2. Gramoxone Inteon + Direx + Agridex	21 oz + 32 oz + 1.2 pt	70	95	100
3. Gramoxone Inteon + Linex	21 oz + 32 oz	87	95	99
4. Gramoxone Inteon + Layby Pro + Agridex	21 oz + 32 oz + 1.2 pt	78	93	100
5. Gramoxone Inteon + Cotoran	21 oz + 32 oz	80	95	100
6. Gramoxone Inteon + Matrix + Agridex	21 oz + 0.5 oz + 1.2pt	80	90	98
7. Gramoxone Inteon + Valor + Agridex	21 oz + 2 oz + 1.2 pt	77	93	98
8. Ignite + Goal Tender	23 fl oz + 8 oz	77	92	98
9. Ignite + Goal Tender	29 fl oz + 8 oz	60	98	100
10. Ignite + Direx	40 oz + 32 oz	40	90	100
11. Ignite + Linex + AMS	40 oz + 32 oz + 3 lb	60	97	100
12. Ignite + Layby Pro	40 oz + 32 oz	47	93	100
13. Ignite + Cotoran + AMS	40 oz + 32 oz + 3 lb	75	95	100
14. Ignite + Matrix	40 oz + 0.5 oz	55	97	100
15. Ignite + Valor	40 oz + 2 oz	83	92	98
16. Ignite + AMS	40 oz + 3 lb	57	93	100
17. Roundup Weathermax	22 fl oz	50	97	100
18. Roundup Weathermax + Matrix	22 fl oz + 0.5 oz	78	98	100
19. Roundup Weathermax + Layby Pro	22 fl oz + 32 oz	23	72	100
20. Roundup Weathermax + Direx	22 fl oz + 32 oz	40	80	100
21. Roundup Weathermax + Valor	22 fl oz + 2 oz	77	100	100
22. Roundup Weathermax + Cotoran	22 fl oz + 32 oz	33	95	100
23. Roundup Weathermax + Linex	22 fl oz + 32 oz	10	87	98
24. Roundup Weathermax + 2,4-D	22 fl oz + 1 pt	37	95	100
25. Shark + AMS + Agridex	1.5 oz + 3 lb + 1.2 pt	25	20	20
26. Shark + Roundup Weathermax + AMS	1.5 oz + 22 fl oz + 3lb	73	100	100
27. ET + Agridex	0.75 oz + 1.2 pt	27	27	30
28. ET + Roundup Weathermax	0.75 oz + 22 fl oz	83	100	100
29. ET + Roundup Weathermax	1.5 oz + 22 fl oz	77	100	100
30. Untreated	---	0	0	0

Table 2.

Prickly Lettuce Percent Control				
Treatments	Rate pr/A	8 DAT	15 DAT	20 DAT
1. Gramoxone Inteon + Agridex	21 oz + 1.2 pt	93	99	100
2. Gramoxone Inteon + Direx + Agridex	21 oz + 32 oz + 1.2 pt	93	100	100
3. Gramoxone Inteon + Linex	21 oz + 32 oz	90	100	100
4. Gramoxone Inteon + Layby Pro + Agridex	21 oz + 32 oz + 1.2 pt	95	98	100
5. Gramoxone Inteon + Cotoran	21 oz + 32 oz	97	100	100
6. Gramoxone Inteon + Matrix + Agridex	21 oz + 0.5 oz + 1.2 pt	63	100	100
7. Gramoxone Inteon + Valor + Agridex	21 oz + 2 oz + 1.2 pt	100	100	100
8. Ignite + Goal Tender	23 fl oz + 8 oz	87	100	100
9. Ignite + Goal Tender	29 fl oz + 8 oz	63	100	100
10. Ignite + Direx	40 oz + 32 oz	43	100	100
11. Ignite + Linex + AMS	40 oz + 32 oz + 3 lb	30	100	100
12. Ignite + Layby Pro	40 oz + 32 oz	30	100	100
13. Ignite + Cotoran + AMS	40 oz + 32 oz + 3 lb	90	100	100
14. Ignite + Matrix	40 oz + 0.5 oz	53	100	100
15. Ignite + Valor	40 oz + 2 oz	93	100	100
16. Ignite + AMS	40 oz + 3 lb	70	100	100
17. Roundup Weathermax	22 fl oz	23	97	100
18. Roundup Weathermax + Matrix	22 fl oz + 0.5 oz	13	53	97
19. Roundup Weathermax + Layby Pro	22 fl oz + 32 oz	13	53	100
20. Roundup Weathermax + Direx	22 fl oz + 32 oz	23	65	97
21. Roundup Weathermax + Valor	22 fl oz + 2 oz	90	100	100
22. Roundup Weathermax + Cotoran	22 fl oz + 32 oz	17	90	100
23. Roundup Weathermax + Linex	22 fl oz + 32 oz	3	80	97
24. Roundup Weathermax + 2,4-D	22 fl oz + 1 pt	17	85	100
25. Shark + AMS + Agridex	1.5 oz + 3 lb + 1.2 pt	0	0	25
26. Shark + Roundup Weathermax + AMS	1.5 oz + 22 fl oz + 3 lb	88	100	100
27. ET + Agridex	0.75 oz + 1.2 pt	17	23	27
28. ET + Roundup Weathermax	0.75 oz + 22 fl oz	88	100	100
29. ET + Roundup Weathermax	1.5 oz + 22 fl oz	53	92	100
30. Untreated	---	0	0	0

Table 3.

Shepherd's purse Percent Control				
Treatments	Rate pr/A	8 DAT	15 DAT	20 DAT
1. Gramoxone Inteon + Agridex	21 oz + 1.2 pt	80	93	98
2. Gramoxone Inteon + Direx + Agridex	21 oz + 32 oz + 1.2 pt	88	100	100
3. Gramoxone Inteon + Linex	21 oz + 32 oz	87	99	100
4. Gramoxone Inteon + Layby Pro + Agridex	21 oz + 32 oz + 1.2 pt	92	100	100
5. Gramoxone Inteon + Cotoran	21 oz + 32 oz	97	98	100
6. Gramoxone Inteon + Matrix + Agridex	21 oz + 0.5 oz + 1.2pt	88	95	99
7. Gramoxone Inteon + Valor + Agridex	21 oz + 2 oz + 1.2 pt	92	98	99
8. Ignite + Goal Tender	23 fl oz + 8 oz	63	97	100
9. Ignite + Goal Tender	29 fl oz + 8 oz	48	99	100
10. Ignite + Direx	40 oz + 32 oz	37	98	100
11. Ignite + Linex + AMS	40 oz + 32 oz + 3 lb	33	100	100
12. Ignite + Layby Pro	40 oz + 32 oz	27	100	100
13. Ignite + Cotoran + AMS	40 oz + 32 oz + 3 lb	70	100	100
14. Ignite + Matrix	40 oz + 0.5 oz	53	100	100
15. Ignite + Valor	40 oz + 2 oz	73	98	100
16. Ignite + AMS	40 oz + 3 lb	37	99	100
17. Roundup Weathermax	22 fl oz	17	92	100
18. Roundup Weathermax + Matrix	22 fl oz + 0.5 oz	13	85	100
19. Roundup Weathermax + Layby Pro	22 fl oz + 32 oz	10	62	100
20. Roundup Weathermax + Direx	22 fl oz + 32 oz	50	63	100
21. Roundup Weathermax + Valor	22 fl oz + 2 oz	67	100	100
22. Roundup Weathermax + Cotoran	22 fl oz + 32 oz	17	63	100
23. Roundup Weathermax + Linex	22 fl oz + 32 oz	3	83	97
24. Roundup Weathermax + 2,4-D	22 fl oz + 1 pt	27	85	100
25. Shark + AMS + Agridex	1.5 oz + 3 lb + 1.2 pt	35	45	40
26. Shark + Roundup Weathermax + AMS	1.5 oz + 22 fl oz + 3lb	83	100	100
27. ET + Agridex	0.75 oz + 1.2 pt	27	47	60
28. ET + Roundup Weathermax	0.75 oz + 22 fl oz	67	98	100
29. ET + Roundup Weathermax	1.5 oz + 22 fl oz	50	100	100
30. Untreated	---	0	0	0

Field Bindweed Control in Fallow Bed
 UCCE - Tulare/Kings & Fresno Co. - WSREC-2006
 Steve Wright, Kurt Hembree, Lalo Banuelos, Sark Davidian

The trial was conducted in Five Points in cooperation with the Westside Research and Extension Center. The trial was sprayed on September 8, 2006 to fallow ground with beds going into cotton. Indicate 5 at 6 fl oz/100 gallons and Ammonium Sulfate at 10 lbs/100 gallons were added to Roundup Weathermax. Air temperature was at 95° F with wind factor at 0 mph. The Hagie High Cycle sprayer was used with a volume of 5, 10 & 15 gpa, speed of 3 mph, and pressure at 30 psi. XR8001VS, XR8002VS, & XR8004VS flat fan nozzles were used as a broadcast. The plot size was 6-40 inch beds by 300 feet, with 4 replications. At the time of application the stage of field bindweed were stressed for moisture.

The objective of this study was to evaluate Roundup Weathermax tank mixed with Indicate and Ammonium Sulfate with different nozzles and volume. The highest control was achieved with lower gallonage 5-10 gallons versus 20 gallons.

Table 1.

Field Bindweed Percent Control						
Treatment	Lba.i./ Acre	Product/ Acre	Nozzles	GPA	Water pH*	10-Oct.
1. Roundup Weathermax Indicate 5	4.0 ---	46.5 fl oz 6 fl oz/100 gal	XR8001VS	5.6	4.56	90
2. Roundup Weathermax Indicate 5	4.0 ---	46.5 fl oz 6 fl oz/100 gal	XR8002VS	11.3	4.28	86
3. Roundup Weathermax Indicate 5	4.0 ---	46.5 fl oz 6 fl oz/100 gal	XR8004VS	22.5	4.66	76
4. Roundup Weathermax Ammonium sulfate	4.0 ---	46.5 fl oz 10 lb/100 gal	XR8001VS	5.6	6.09	88
5. Roundup Weathermax Ammonium sulfate	4.0 ---	46.5 fl oz 10 lb/100 gal	XR8002VS	11.3	6.07	89
6. Roundup Weathermax Ammonium sulfate	4.0 ---	46.5 fl oz 10 lb/100 gal	XR8004VS	22.5	6.08	76

*Spray tank pH after adding Indicate or ammonium sulfate, but before adding Roundup.

Weed Control in Liberty Link Cotton With Ignite

UCCE - Tulare/Kings Co. – WSREC - 2006

Steve Wright, Lalo Banuelos, Matt Mills, John Soares, Sarah Hutmacher
Sark Davidian, Anna Brown, Tony Garcia, Ed Scott, Rafael Solorio

This trial was conducted in cooperation with the Westside Research and Extension Center in Five Points. The treatments were applied to Liberty Link Fibermax 966LL cotton on June 9, June 23, and July 24, 2006. The plot size was 4–38 inch rows by 35 feet with 4 replications.

The first application (A treatments) was applied over the top on June 9 using a 4-wheel quad sprayer with 8002 flat fan nozzles over the top at a volume of 15 gpa, a pressure of 40 psi, at 4 mph, using a 3 liter mix size. The temperature at application was approximately 87°F with a wind factor of 2-4 mph. The cotton was in the 12 node stage and was approximately 15-20 inches tall.

The second application (B treatments) was applied as a directed spray on June 23 using a red tractor with 8002 flat fan nozzles with 2 drops per row at a volume of 15 gpa, a pressure of 40 psi, at 4 mph, using a 3 liter mix size. The temperature at application was approximately 92°F with a wind factor of 0-2 mph.

The third application (C treatments) was applied as a directed spray on July 24 using a Hagie High-Cycle tractor with 8002 flat fan nozzles with 2 drops per row at a volume of 15 gpa, a pressure of 40 psi, at 4 mph, using a 3 gallon mix size. The temperature at application was approximately 97°F with a wind factor of 0-2 mph. The cotton in the treatment 1 plots was in the 13 node stage and was approximately 22 inches tall. The cotton in the rest of the trial was in the 22 node stage and was approximately 36 inches tall.

Treatments applied to the black nightshade and field bindweed showed good control at the 52 DAT data collection, ranging from 80-100 percent for field bindweed and 93-100 percent for black nightshade. Both of these also showed fair control percentages after the second treatment as well (over 60 percent in all treatments). However, johnsongrass treatments exhibited marginal results in all data collection dates, giving a high percentage of control of only 67 percent in treatment 5 at the first data collection date.

Table 1.

Black Nightshade Percent Control						
Treatments	Rate pr/A	Applied	4 DAT	21 DAT	32 DAT	52 DAT
1. Ignite 280	22 oz	A, B, C	58	94	83	x
2. Ignite 280	29 oz	A, B	63	85	63	93
3. Ignite 280	29 oz	A, B, C	73	83	67	100
4. Ignite 280	43 oz	A, B	68	87	55	100
5. Ignite 280	43 oz	B, C	0	91	75	99
6. Ignite 280	43 oz & 29 oz	A, B	76	90	60	100
7. Ignite 280	43 oz & 29 oz & 15 oz	A, B, C	59	78	43	100
8. Ignite 280	43 oz & 22 oz & 22oz	A, B, C	74	80	20	100
9. Untreated	--	--	0	0	0	0

A Stage = First Application

B Stage = Second application

C Stage = Third Application

Field Bindweed Percent Control						
Treatments	Rate pr/A	Applied	4 DAT	21 DAT	32 DAT	52 DAT
1. Ignite 280	22 oz	A, B, C	24	69	75	x
2. Ignite 280	29 oz	A, B	30	64	37	86

3. Ignite 280	29 oz	A, B, C	36	70	53	88
4. Ignite 280	43 oz	A, B	41	75	43	91
5. Ignite 280	43 oz	B, C	0	73	60	95
6. Ignite 280	43 oz & 29 oz	A, B	48	63	45	95
7. Ignite 280	43 oz & 29 oz & 15 oz	A, B, C	43	80	40	80
8. Ignite 280	43 oz & 22 oz & 22oz	A, B, C	43	62	53	94
9. Untreated	--	--	0	0	0	0

Table 2.

Table 3.

Johnsongrass Percent Control					
Treatments	Rate pr/A	Applied	21 DAT	32 DAT	52 DAT
1. Ignite 280	22 oz	A, B, C	50	20	x
2. Ignite 280	29 oz	A, B	40	10	0
3. Ignite 280	29 oz	A, B, C	20	10	0
4. Ignite 280	43 oz	A, B	65	10	--
5. Ignite 280	43 oz	B, C	67	30	0
6. Ignite 280	43 oz & 29 oz	A, B	50	20	0
7. Ignite 280	43 oz & 29 oz & 15 oz	A, B, C	60	0	0
8. Ignite 280	43 oz & 22 oz & 22oz	A, B, C	20	5	0
9. Untreated	--	--	0	0	0

Table 4.

Percent Cotton Injury						
Treatments	Rate pr/A	Applied	4 DAT	21 DAT	32 DAT	52 DAT
1. Ignite 280	22 oz	A, B, C	0	28	38	x
2. Ignite 280	29 oz	A, B	0	0	0	0
3. Ignite 280	29 oz	A, B, C	0	0	0	0
4. Ignite 280	43 oz	A, B	0	0	0	0
5. Ignite 280	43 oz	B, C	0	0	0	0
6. Ignite 280	43 oz & 29 oz	A, B	0	0	0	0
7. Ignite 280	43 oz & 29 oz & 15 oz	A, B, C	0	0	0	0
8. Ignite 280	43 oz & 22 oz & 22oz	A, B, C	0	0	0	0
9. Untreated	--	--	0	0	0	0

X = @ 52 DAT represents contamination: Left over growth regulator treatment is believed to have accidentally mixed with treatment 1, therefore not giving the last rating a fair rating.

Layby Weed Control in Liberty Link Fibermax Cotton

UCCE - Tulare/Kings Co. – WSREC - 2006

Steve Wright, Lalo Banuelos, John Soares, Matt Mills, Sarah Hutmacher

Shelly Elam, Anna Brown, Sark Davidian, Tony Garcia

This trial was conducted at the Westside Research Station in Five Points. The treatments were applied to Liberty Link Fibermax 966LL cotton. The treatments were applied on June 9 and June 27 in 2006. The plot sizes were 4–38 inch rows by 35 feet with three replications.

Ignite at 22 oz was applied over the top on June 9 using a 4-wheel quad sprayer with 8002 flat fan nozzles over the top at a volume of 15 gpa, a pressure of 40 psi, at 4 mph, using a 3 liter mix size. The temperature at application was approximately 87°F with a wind factor of 2-4 mph. The cotton was in the 12 node stage and was approximately 15-20 inches tall.

The second application, with the treatments listed, was applied as a directed spray on June 27 using a tractor sprayer with 8002 flat fan nozzles using 2 drops per row. The volume was 15 gpa, with pressure of 40 psi, speed at 4 mph, and mix size using 3 liters. The temperature at application was approximately 93°F with a wind factor of 0-3 mph. The cotton was in the 14 node stage and was approximately 26 inches tall.

All treatments gave 60 percent control or greater of field bindweed. ET + Agridex, ET + Indicate, Shark + Agridex, and Ignite + Indicate gave the best control at 83-95 percent at 14 DAT. Most treatments gave fair - good control of black nightshade, however less than expected. Envoke + Ignite gave the best control at 90 percent at 14 DAT. Envoke + Indicate gave the best control of johnsongrass at 80 percent at 14 DAT. Cotton injury ranged from no injury to 13 percent injury (Table 1). The trial was accidentally sprayed and cultivated so no further evaluations were taken.

Table 1.

Percent Control at 14 DAT					
Treatments	Rate pr/A	Field Bindweed	Black Nightshade	Johnsongrass	Cotton Injury
1. ET + Agridex	1 fl oz + 4.8 oz	83	70	15	7
2. ET + Indicate	1 fl oz + 3.5 oz	90	67	35	0
3. ET + Ignite	1 fl oz + 22 oz	73	50	30	13
4. Shark + Agridex	1.6 oz + 4.8 oz	90	62	38	10
5. Shark + Indicate	1.6 oz + 3.5 oz	70	43	25	5
6. Shark + Ignite	1.6 oz + 22 oz	95	65	55	5
7. Chateau + Agridex	2 oz + 4.8 oz	65	75	45	10
8. Chateau + Indicate	2 oz + 3.5 oz	---	53	50	0
9. Chateau + Ignite	2 oz + 22 oz	60	77	60	2
10. Envoke + Agridex	.15 oz + 4.8 oz	63	70	53	3
11. Envoke + Indicate	.15 oz + 3.5 oz	73	40	80	10
12. Envoke + Ignite	.15 oz + 22 oz	68	90	25	2
13. Ignite + Indicate	22 oz + 3.5 oz	89	73	---	8
14. Untreated	---	20	42	38	3

*1st application Ignite @ 22 oz

Ivyleaf Annual Morningglory and Johnsongrass Control in Liberty Link Cotton with Ignite

UCCE - Tulare/Kings Co. - Tulare – 2006

Steve Wright, Lalo Banuelos, John Soares, Matt Mills, Sarah Hutmacher
Anna Brown, Shelly Elam, Sark Davidian, and Raymond Gonzalez

This trial was conducted near Tulare. The treatments were applied to Liberty Link Fibermax 966LL cotton. The treatments were applied on June 20, July 18, and August 8, 2006. The plot sizes were 4–38 inch rows by 25 feet with three replications.

The first application (A treatments) was applied over the top on June 20 using a CO₂ backpack sprayer with 8002 flat fan nozzles at a volume of 15 gpa, a pressure of 40 psi, at 4 mph, using a 3 liter mix size. The temperature at application was approximately 84°F with a wind factor of 0-2 mph. The cotton was in the 11 node stage and was approximately 12 inches tall. The ivyleaf annual morningglory was at the 2–4 leaf stage and johnsongrass was small and scattered..

The second application (B treatments) was applied as a directed spray on July 18 using a CO₂ backpack sprayer with 8002 flat fan nozzles with 2 drops per row at a volume of 15 gpa, a pressure of 40 psi, at 4 mph, using a 3 liter mix size. The temperature at application was approximately 92.4°F with a wind factor of 0-1 mph. The cotton was in the 19 node stage and was approximately 31 inches tall. The ivyleaf annual morningglory was in the 2-4 leaf stage.

The third application (C treatments) was applied as a directed spray on August 8 using a CO₂ backpack sprayer with 8002 flat fan nozzles with 2 drops per row at a volume of 15 gpa, a pressure of 30 psi, at 3.4 mph, using a 3 liter mix size. The temperature at application was approximately 79°F with a wind factor of 0-2 mph. The cotton was in the 19-20 node stage and was approximately 35 inches tall. The ivyleaf annual morningglory was in the 2-4 leaf stage.

All treatments showed excellent control results, exhibiting 100 percent control upon last data counts for both ivyleaf annual morningglory and johnsongrass.

Table 1.

Ivyleaf Annual Morningglory Percent Control							
Treatments	Applied	Rate pr/A	8 DAT	35 DAT	57 DAT	65 DAT	
						Existing Weeds	Regrowth
1. Ignite 280	A, B, C	22 oz	94	93	100	100	63
2. Ignite 280	A, B	29 oz	98	95	100	--	48
3. Ignite 280	A, B, C	29 oz	96	95	100	100	92
4. Ignite 280	A, B	43 oz	97	97	100	--	77
5. Ignite 280	B, C	43 oz	0	95	100	100	95
6. Ignite 280	A, B	43 oz & 29 oz	95	95	100	--	67
7. Ignite 280	A, B, C	43 oz & 29 oz & 15 oz	100	97	100	100	90
8. Ignite 280	A, B, C	43 oz & 22 oz & 22oz	100	95	100	100	83
9. Untreated	--	--	0	95	100	--	48

* For the 65 DAT rating, the ratings in the column marked “Existing Weeds” refers only to morningglory that was treated by the C treatments, and the column marked “Regrowth” refers to control of regrowth attributed to the previous treatment

* The untreated was sprayed with 22 oz of Ignite on July 18 and August 8 to manage weed growth.

Table 2.

Johnsongrass Percent Control				
Treatments	Applied	Rate pr/A	8 DAT	35 DAT
1. Ignite 280	A, B, C	22 oz	90	100
2. Ignite 280	A, B	29 oz	90	100
3. Ignite 280	A, B, C	29 oz	88	100
4. Ignite 280	A, B	43 oz	90	100
5. Ignite 280	B, C	43 oz	--	--
6. Ignite 280	A, B	43 oz & 29 oz	90	100
7. Ignite 280	A, B, C	43 oz & 29 oz & 15 oz	90	100
8. Ignite 280	A, B, C	43 oz & 22 oz & 22oz	80	100
9. Untreated	--	--	0	100

Table 3.

Cotton Injury					
Treatments	Applied	Rate pr/A	8 DAT	35 DAT	57 DAT
1. Ignite 280	A, B, C	22 oz	0	0	0
2. Ignite 280	A, B	29 oz	0	0	0
3. Ignite 280	A, B, C	29 oz	0	0	0
4. Ignite 280	A, B	43 oz	0	0	0
5. Ignite 280	B, C	43 oz	0	0	0
6. Ignite 280	A, B	43 oz & 29 oz	0	0	0
7. Ignite 280	A, B, C	43 oz & 29 oz & 15 oz	0	0	0
8. Ignite 280	A, B, C	43 oz & 22 oz & 22oz	0	0	0
9. Untreated	--	--	0	0	0

Layby Ivyleaf Annual Morningglory Control in Liberty Link Cotton

UCCE - Tulare/Kings Co. – Tulare - 2006

Steve Wright, Lalo Banuelos, John Soares, Matt Mills

Sarah Hutmacher, Anna Brown, Sark Davidian

This trial was conducted near Tulare. The treatments were applied to Liberty Link Fibermax 966LL cotton. The treatments were applied on June 20 and July 18 in 2006. The plot sizes were 4–38 inch rows by 30 feet with three replications.

Ignite at 29 oz. was applied as a directed spray on June 20 using a Hagie High Cycle sprayer with 8002 flat fan nozzles on drops with 2 drops per row. The volume was 15 gpa, the pressure was 40 psi, the speed was 4 mph, and the mix size was 3 gallons. The temperature at application was approximately 87°F with a wind factor of 0-2 mph. The cotton was in the 9 node stage and was approximately 10 inches tall. The ivyleaf annual morningglory was 2–4 leaf stage.

The second application (treatment listed) was applied as a directed spray on July 18 using a CO₂ backpack sprayer with 8002 flat fan nozzles on drops with 2 drops per row. The volume was 15 gpa, the pressure was 40 psi, the speed was 4 mph, and the mix size was 3 liters. The temperature at application was approximately 92.4°F with a wind factor of 0-1 mph. The cotton was in the 19 node stage and was approximately 31 inches tall. The reemergence of ivyleaf annual morningglory was in the 2-4 leaf stage.

The trial showed that all treatments had high percentages of ivyleaf annual morningglory control while holding a low percentage of cotton injury (0 percent for all treatments on all data collection dates). The initial treatment, 29 oz of Ignite, was spread across all plots in all repetitions and demonstrated good control percentages in all cases (80 percent morningglory control). After the second application of various treatments, these high control percentages continued, all being over 80 percent except treatment 8, a mix of Chateau and Ignite, which had a 70 percent control percentage on the second data collection, date (35 DAT). “Indicate” increased control of ET but did not help increase control of Shark or Chateau.

Table 1.

Percent Control					
		Ivyleaf Annual Morningglory		Cotton Injury	
Treatments	Rate pr/A	8 DAT	35 DAT	8 DAT	35 DAT
1. ET + Agridex	1 fl oz + 4.8 oz	80	82	0	0
2. ET + Indicate	1 fl oz + 3.5 oz	80	93	0	0
3. ET + Ignite	1 fl oz + 22 oz	80	93	0	0
4. Shark + Agridex	1.6 oz + 4.8 oz	80	95	0	0
5. Shark + Indicate	1.6 oz + 3.5 oz	80	93	0	0
6. Shark + Ignite	1.6 oz + 22 oz	80	97	0	0
7. Chateau + Agridex	2 oz + 4.8 oz	80	88	0	0
8. Chateau + Indicate	2 oz + 3.5 oz	80	70	0	0
9. Chateau + Ignite	2 oz + 22 oz	80	92	0	0
10. Ignite + Indicate	22 oz + 3.5 oz	80	90	0	0
11. Untreated					
B. Ignite + Indicate	22 oz + 3.5 oz	80	83	0	0

Crop Safety Study With Glyphosate Formulations on Roundup Ready Flex Cotton

UCCE - Tulare/Kings Co. - WSREC - Trial #1 - 2006

Steve Wright, Lalo Banuelos, Matt Mills, John Soares

Sarah Hutmacher, Anna Brown, Shelly Elam, Ed Scott, Rafael Solorio

This trial was conducted in cooperation with the Westside Research and Extension Center in Five Points. The treatments were applied to Roundup Ready Flex Phytogen 715RF cotton that was planted on May 1, 2006 and cultivated on May 9, 2006. The plot size was 4-38 inch rows by 30 feet with four replications.

The first application (A treatments) was applied over the top on May 31 using a 4 wheel quad sprayer with 8002 nozzles. The volume was 15 gpa, the pressure was 40 psi, the quad speed was 4 mph, and the mix size was 3 liters. The temperature at the time of application was 76°F and the wind factor was 0-5 mph. The cotton was in the 4 leaf stage and was approximately 6-7 inches tall.

The second application (B treatments) was applied over the top on June 23 using a tractor sprayer with 8002 nozzles. The volume was 15 gpa, the pressure was 40 psi, the tractor speed was 4 mph, and the mix size was 3 liters. The temperature at the time of application was 87°F and the wind factor was 2-4 mph. The cotton was in the 12 node stage and was approximately 18-24 inches tall.

The third application (C treatments) was applied over the top on July 12 using a Hagie High Cycle sprayer with 8002 nozzles. The volume was 15 gpa, the pressure was 40 psi, the tractor speed was 4 mph, and the mix size was 3 gallons. The temperature at the time of application was 94°F and the wind factor was 1-5 mph. The cotton was in the 17 node stage and was approximately 36 inches tall.

The fourth application (D treatments) was applied over the top on August 4 using a CO₂ backpack sprayer with 8002 nozzles. The volume was 15 gpa, the pressure was 30 psi, the speed was 3.4 mph, and the mix size was 1.5 gallons. The temperature at the time of application was 85°F and the wind factor was 6 mph. The cotton was in the 20 node stage and was approximately 45 inches tall.

The objective of the study was to evaluate the effect of different formulations with multiple timings applied over the top of Roundup Ready Flex cotton. No crop injury was observed (Table 1). There were no differences between treatments in the final plant mapping or final yield (Table 2 & 3). We are still waiting for the final gin turnouts and HVI on lint.

Table 1.

Percent Cotton Injury								
Treatment	Applied	Rate ai/A	9 DAT	21 DAT	54 DAT	65 DAT	70 DAT	77 DAT
1. MON 79844 + AMS	A, B, C, D	1.125 lb + 2% w/w	0	0	0	0	0	0
2. MON 79844 + AMS	A, B, C, D	2.25 lb + 2% w/w	0	0	0	0	0	0
3. MON 79922 + AMS	A, B, C, D	1.125 lb + 2% w/w	0	0	0	0	0	0
4. MON 79922 + AMS	A, B, C, D	2.25 lb + 2% w/w	0	0	0	0	0	0
5. Roundup Original Max + AMS	A, B, C, D	1.125 lb + 2% w/w	0	0	0	0	0	0
6. Roundup Original Max + AMS	A, B, C, D	2.25 + 2% w/w	0	0	0	0	0	0
7. Roundup Weathermax + AMS	A, B, C, D	1.125 lb + 2% w/w	0	0	0	0	0	0
8. Roundup Weathermax + AMS	A, B, C, D	2.25 lb + 2% w/w	0	0	0	0	0	0
9. Untreated	--	--	0	0	0	0	0	0

* AMS = Ammonium Sulfate

Table 2.

Final Plant Mapping										
Treatment	#FB	# Veg. Nodes	Height	HNR	% Bolls			% Ret. BT 5	95% Zone (FP 1)	% Ret. 95% Zone
					Pos. 1	Pos. 2	Pos. 3			
1. MON 79844 + AMS	15.6	6.6	43.8	1.98	58.1	26.6	12.3	64	19.8	42.7
2. MON 79844 + AMS	16.0	6.8	44.4	1.95	56.0	29.8	8.4	54	19.7	39.2
3. MON 79922 + AMS	15.4	6.8	43.8	1.98	62.6	25.1	8.9	55	19.5	41.5
4. MON 79922 + AMS	16.0	6.9	44.4	1.94	65.6	22.8	8.9	53	19.4	44.2
5. Roundup Original Max + AMS	15.3	7.1	44.8	2.00	64.4	22.6	10.7	56	19.5	44.6
6. Roundup Original Max + AMS	15.8	7.2	45.8	2.00	56.4	24.5	13.6	56	20.4	45.0
7. Roundup Weathermax + AMS	15.6	6.9	44.4	1.98	63.6	25.6	3.1	60	18.7	49.6
8. Roundup Weathermax + AMS	15.9	6.8	45.5	2.01	63.5	24.3	8.3	54	18.5	46.3
9. Untreated	15.4	6.8	44.1	1.99	61.7	27.2	5.0	52	19.6	40.8

Table 3.

Treatment	Applied	Rate ai/A	Seed Cotton lbs/A
1. MON 79844 + AMS	A, B, C, D	1.125 lb + 2% w/w	2523
2. MON 79844 + AMS	A, B, C, D	2.25 lb + 2% w/w	2417
3. MON 79922 + AMS	A, B, C, D	1.125 lb + 2% w/w	2483
4. MON 79922 + AMS	A, B, C, D	2.25 lb + 2% w/w	2400
5. Roundup Original Max + AMS	A, B, C, D	1.125 lb + 2% w/w	2428
6. Roundup Original Max + AMS	A, B, C, D	2.25 + 2% w/w	2357
7. Roundup Weathermax + AMS	A, B, C, D	1.125 lb + 2% w/w	2444
8. Roundup Weathermax + AMS	A, B, C, D	2.25 lb + 2% w/w	2426
9. Untreated	--	--	2484

Crop Safety Study with Glyphosate Formulations on RR Flex Cotton

UCCE - Tulare/Kings Co. - WSREC - Trial #2 - 2006

Steve Wright, Lalo Banuelos, Matt Mills, John Soares,

Sarah Hutmacher, Anna Brown, Shelly Elam, Ed Scott, Rafael Solorio

This trial was conducted in cooperation with the Westside Research and Extension Center in Five Points. The treatments were applied to Roundup Ready Flex Phytogen 715RF cotton that was planted on May 1, 2006 and cultivated on May 9, 2006. The plot size was 4-38 inch rows by 30 feet with four replications.

The first application (A treatments) was applied over the top on May 31 using a 4 wheel quad sprayer with 8002 nozzles. The volume was 15 gpa, the pressure was 40 psi, the quad speed was 4 mph, and the mix size was 3 liters. The temperature at the time of application was 76°F and the wind factor was 0-5 mph. The cotton was in the 4 leaf stage and was approximately 6-7 inches tall.

The second application (B treatments) was applied over the top on June 23 using a tractor sprayer with 8002 nozzles. The volume was 15 gpa, the pressure was 40 psi, the tractor speed was 4 mph, and the mix size was 3 liters. The temperature at the time of application was 87°F and the wind factor was 2-4 mph. The cotton was in the 12 node stage and was approximately 18-24 inches tall.

The third application (C treatments) was applied over the top on July 12 using a Hagie High Cycle sprayer with 8002 nozzles. The volume was 15 gpa, the pressure was 40 psi, the tractor speed was 4 mph, and the mix size was 3 gallons. The temperature at the time of application was 94°F and the wind factor was 1-5 mph. The cotton was in the 17 node stage and was approximately 36 inches tall.

The objective of the study was to evaluate the effect of different formulations with multiple timings applied over the top of Roundup Ready Flex cotton. No crop injury was observed (Table 1). Data was not needed for final plant mapping, weeds, or yield.

Table 1.

Cotton Injury							
Treatments	Applied	Rate ai/A	9 DAT	21 DAT	54 DAT	65 DAT	72 DAT
1. MON 79749 + AMS	A, B, C	1.125 lb + 2% w/w	0	0	0	0	0
2. MON 79787 + AMS	A, B, C	1.125 lb + 2% w/w	0	0	0	0	0
3. MON 79927 + AMS	A, B, C	1.125 lb + 2% w/w	0	0	0	0	0
4. MON 79789 + AMS	A, B, C	1.125 lb + 2% w/w	0	0	0	0	0
5. MON 79790 + AMS	A, B, C	1.125 lb + 2% w/w	0	0	0	0	0
6. MON 79888 + AMS	A, B, C	1.125 lb + 2% w/w	0	0	0	0	0
7. MON 79859 + AMS	A, B, C	1.125 lb + 2% w/w	0	0	0	0	0
8. MON 79862 + AMS	A, B, C	1.125 lb + 2% w/w	0	0	0	0	0
9. MON 79813 + AMS	A, B, C	1.125 lb + 2% w/w	0	0	0	0	0
10. MON 79749 + AMS	A, B, C	2.25 lb + 2% w/w	0	0	0	0	0
11. MON 79787 + AMS	A, B, C	2.25 lb + 2% w/w	0	0	0	0	0
12. MON 79927 + AMS	A, B, C	2.25 lb + 2% w/w	0	0	0	0	0
13. MON 79789 + AMS	A, B, C	2.25 lb + 2% w/w	0	0	0	0	0
14. MON 79790 + AMS	A, B, C	2.25 lb + 2% w/w	0	0	0	0	0
15. MON 79888 + AMS	A, B, C	2.25 lb + 2% w/w	0	0	0	0	0
16. MON 79859 + AMS	A, B, C	2.25 lb + 2% w/w	0	0	0	0	0
17. MON 79862 + AMS	A, B, C	2.25 lb + 2% w/w	0	0	0	0	0
18. MON 79813 + AMS	A, B, C	2.25 lb + 2% w/w	0	0	0	0	0
19. Untreated	--	--	0	0	0	0	0

* AMS = Ammonium Sulfate

Weed Control in Roundup Ready Flex Cotton

UCCE - Tulare Co. - Tulare - 2006

Steve Wright, Lalo Banuelos, John Soares, Matt Mills

Sarah Hutmacher, Anna Brown, Sark Davidian, Ben Ainley, Shelly Elam

This trial was conducted near Tulare. The treatments were applied to Roundup Ready Flex PhytoGen 725RF cotton. The treatments were applied on June 20, July 18, and August 11, 2006. The plot sizes were 4–38 inch rows by 25 feet with three replications.

The first application (A treatments) was applied over the top on June 20 using CO₂ backpack sprayer with 8002 flat fan nozzles. The volume was 15 gpa, the pressure was 40 psi, the speed was 4 mph, and the mix size was 3 liters. The temperature at application was approximately 84°F with a wind factor of 0-2 mph. The cotton was in the 11 node stage and was approximately 12 inches tall. The ivyleaf annual morningglory was in the 2-4 leaf stage.

The second application (B treatments) was applied as a directed spray on July 18 using a CO₂ backpack sprayer with 8002 flat fan nozzles on drops with 2 drops per row. The volume was 15 gpa, the pressure was 40 psi, the speed was 4 mph, and the mix size was 3 liters. The temperature at application was approximately 92°F with a wind factor of 0-1 mph. The cotton was in the 19 node stage and was approximately 31 inches tall. The ivyleaf annual morningglory had reemerged and was in the 2-4 leaf stage.

The third application (C treatments) was applied as a directed spray on August 11 using a CO₂ backpack sprayer with 8002 flat fan nozzles on drops with 2 drops per row. The volume was 15 gpa, the pressure was 30 psi, the speed was 3.4 mph, and the mix size was 3 liters. The temperature at application was approximately 80°F with a wind factor of 0-2 mph. The cotton was in the 20 node stage and was approximately 37 inches tall. The ivyleaf annual morningglory was in the 3-4 leaf stage (approximately 1-6 inches tall), with some twining.

Table 1.

Ivyleaf Annual Morningglory Percent Control					
Treatment	Applied	Rate pr/A	8 DAT	35 DAT	57 DAT
1. Touchdown Total	A, B, C	24 oz	92	43	72
2. Touchdown Total Envoke + Agridex	A B,C	24 oz 0.15 oz + 0.25 % v/v	92	60	63
3. Touchdown Total Envoke + Agridex Touchdown Total	A B C	17 oz + 1% v/v + 2.5 lb 0.15 oz + 0.25 % v/v 24 oz	88	50	73
4. Touchdown Total Touchdown Total Envoke + Agridex	A B C	24 oz 24 oz 0.15 oz + 0.25 % v/v	90	50	62
5. Touchdown Total Envoke + Touchdown Total Envoke + Touchdown Total	A B C	24 oz 0.15 oz + 24 oz 0.15 oz + 24 oz	92	75	78
6. Roundup Weathermax	A, B, C	22 oz	90	47	67
7. Roundup Weathermax ET + Roundup Weathermax	A B	22 oz 1 fl oz + 22 oz	90	97	83
8. Roundup Weathermax Shark + Roundup Weathermax	A B	22 oz 1.6 oz + 22 oz	93	95	63
9. Roundup Weathermax Chateau + Roundup Weathermax	A B	22 oz 2 + 22 oz	93	90	88
10. Roundup Weathermax Roundup Weathermax + Indicate	A B	22 oz 22 oz + 3.5 oz	90	47	78
11. Ignite	A		98	73	70
12. Untreated	--	--	0	47	75

Table 2.

Johnsongrass Percent Control				
Treatment	Applied	Rate pr/A	8 DAT	35 DAT
1. Touchdown Total	A, B, C	24 oz	90	100
2. Touchdown Total Envoke + Agridex	A B,C	24 oz 0.15 oz + 0.25 % v/v	90	100
3. Touchdown Total Envoke + Agridex Touchdown Total	A B C	17 oz + 1% v/v + 2.5 lb 0.15 oz + 0.25 % v/v 24 oz	80	100
4. Touchdown Total Touchdown Total Envoke + Agridex	A B C	24 oz 24 oz 0.15 oz + 0.25 % v/v	--	--
5. Touchdown Total Envoke + Touchdown Total Envoke + Touchdown Total	A B C	24 oz 0.15 oz + 24 oz 0.15 oz + 24 oz	--	--
6. Roundup Weathermax	A, B, C	22 oz	87	100
7. Roundup Weathermax ET + Roundup Weathermax	A B	22 oz 1 fl oz + 22 oz	90	100
8. Roundup Weathermax Shark + Roundup Weathermax	A B	22 oz 1.6 oz + 22 oz	90	100
9. Roundup Weathermax Chateau + Roundup Weathermax	A B	22 oz 2 + 22 oz	90	100
10. Roundup Weathermax Roundup Weathermax + Indicate	A B	22 oz 22 oz + 3.5 oz	90	100
11. Ignite	A		78	100
12. Untreated	--	--	0	100

Table 3.

Percent Cotton Injury					
Treatment	Applied	Rate pr/A	8 DAT	35 DAT	57 DAT
1. Touchdown Total	A, B, C	24 oz	0	0	0
2. Touchdown Total Envoke + Agridex	A B,C	24 oz 0.15 oz + 0.25 % v/v	0	12	0
3. Touchdown Total Envoke + Agridex Touchdown Total	A B C	17 oz + 1% v/v + 2.5 lb 0.15 oz + 0.25 % v/v 24 oz	0	0	0
4. Touchdown Total Touchdown Total Envoke + Agridex	A B C	24 oz 24 oz 0.15 oz + 0.25 % v/v	0	5	0
5. Touchdown Total Envoke + Touchdown Total Envoke + Touchdown Total	A B C	24 oz 0.15 oz + 24 oz 0.15 oz + 24 oz	0	0	0
6. Roundup Weathermax	A, B, C	22 oz	0	3	0
7. Roundup Weathermax ET + Roundup Weathermax	A B	22 oz 1 fl oz + 22 oz	0	20	0
8. Roundup Weathermax Shark + Roundup Weathermax	A B	22 oz 1.6 oz + 22 oz	0	18	0
9. Roundup Weathermax Chateau + Roundup Weathermax	A B	22 oz 2 + 22 oz	0	10	0
10. Roundup Weathermax Roundup Weathermax + Indicate	A B	22 oz 22 oz + 3.5 oz	0	0	0
11. Ignite	A		43	23	0
12. Untreated	--	--	0	0	0

**Ivyleaf Annual Morningglory Control in Roundup Ready Flex Cotton Study
Comparison Hooded vs Sloppy Direct**

UCCE - Tulare Co. Tulare – 2006

Steve Wright, Lalo Banuelos, John Soares, Matt Mills
Sarah Hutmacher, Anna Brown, Sark Davidian

The treatments were applied to Roundup Ready Flex Phytogen 725RF cotton. A field was used that had already been sprayed twice with Roundup but still had emerging population of ivyleaf annual morningglory. The treatments were applied using two different sprayers comparing hooded versus sloppy direct. The plot sizes were 6–38 inch rows by 50 feet with three replications.

The sloppy direct application was applied on July 29 using a pull behind sprayer with 8003 flat fan nozzles 2 per row at a volume of 20 gpa, a pressure of 40 psi, and speed of 4 mph. The temperature at application was approximately 92°F with a wind factor of 0-2 mph.

The hooded application was applied on July 29 using the grower’s sprayer with 8004 flat fan nozzles 2 per row; 8003 flat fan nozzles 1 per row; and 6503 nozzles outside rows. A volume of 27 gpa, a pressure of 30 psi, and a speed of 6.5 mph. The cotton was in the 19-20 node stage and was approximately 38-41 inches tall. The majority of ivyleaf annual morningglory was in the 2-4 leaf stage with some tall twinning.

The hooded sprayer gave better control than the sloppy direct in comparison, but not a major difference statistically at the 18 DAT (Table 1). There was no cotton injury (Table 2).

Table 1.

Ivyleaf Annual Morningglory Percent Control				
Treatments	Rate/A	Type	10 DAT	18 DAT
1. Roundup Weathermax + AMS	32 oz + 10#	Hooded	73	63
2. Roundup Weathermax + AMS	32 oz + 10#	Sloppy Direct	72	58
3. Ignite	29 oz	Hooded	73	72
4. Ignite	29 oz	Sloppy Direct	77	53
5. Roundup Weathermax + Shark + AMS	32 oz + 1.6 oz + 10#	Hooded	83	75
6. Roundup Weathermax + Shark + AMS	32 oz + 1.6 oz + 10#	Sloppy Direct	90	72
7. Roundup Weathermax + Ignite	32 oz + 29 oz	Hooded	77	67
8. Roundup Weathermax + Ignite	32 oz + 29 oz	Sloppy Direct	75	57

*AMS = Ammonium Sulfate

Table 2.

Percent Cotton Injury				
Treatments	Rate/A	Type	10 DAT	18 DAT
1. Roundup Weathermax + AMS	32 oz + 10#	Hooded	0	0
2. Roundup Weathermax + AMS	32 oz + 10#	Sloppy Direct	0	0
3. Ignite	29 oz	Hooded	0	0
4. Ignite	29 oz	Sloppy Direct	0	0
5. Roundup Weathermax + Shark + AMS	32 oz + 1.6 oz + 10#	Hooded	0	0
6. Roundup Weathermax + Shark + AMS	32 oz + 1.6 oz + 10#	Sloppy Direct	0	0
7. Roundup Weathermax + Ignite	32 oz + 29 oz	Hooded	0	0
8. Roundup Weathermax + Ignite	32 oz + 29 oz	Sloppy Direct	0	0

Field Bindweed Control Layby in Roundup Ready Cotton

UCCE - Tulare/Kings Co. – WSREC - 2006

Steve Wright, Lalo Banuelos, John Soares, Matt Mills,
Sarah Hutmacher, Shelly Elam, Anna Brown, Sark Davidian

This trial was conducted at the Westside Research Station in Five Points. The treatments were applied to Roundup Ready Flex 715RF cotton. The treatments were applied on the 1st week of June and June 27 in 2006. The plot sizes were 4–38 inch rows by 35 feet with three replications.

Roundup Weathermax at 22 oz was applied as a directed spray on the 1st week of June by the WSREC using a John Deere sprayer with 8002 flat fan nozzles using 2 drops per row. The volume was 20 gpa, the pressure was 40 psi, and speed was 4 mph. This application gave approximately 50 percent control.

The second application using the listed treatments were applied as a directed spray on June 27 using a tractor sprayer with 8002 flat fan nozzles using 2 drops per row. The volume was 15 gpa, with pressure of 40 psi, speed at 4 mph, and the mix size was 3 liters. The temperature at application was approximately 93°F with a wind factor of 0-3 mph. The cotton was in the 15 node stage and was approximately 26 inches tall.

All treatments gave effective control of field bindweed, except for Envoke + Agridex at 14 DAT. Ignite + Agridex and ET, Shark, Envoke, and Chateau tank mixed with Roundup Weathermax improved control significantly compared to Ammonium sulfate. Shark + Agridex and Shark + Roundup Weathermax gave the highest cotton injury at 14 DAT (Table 1).

Table 1.

Percent Control at 14 DAT			
Treatments	Rate pr/A	Field Bindweed	Cotton Injury
1. ET + Agridex	1 fl oz + 4.8 oz	70	0
2. Chateau + Agridex	2 oz + 4.8 oz	70	0
3. Envoke + Agridex	.15 oz + 4.8 oz	42	0
4. Shark + Agridex	1.6 oz + 4.8 oz	68	15
5. Ignite + Agridex	22 oz + 4.8 oz	78	8
6. ET + Roundup Weathermax	1 fl oz + 22 oz	82	7
7. Chateau + Roundup Weathermax	2 oz + 22 oz	83	0
8. Envoke + Roundup Weathermax	.15 oz + 22 oz	88	0
9. Shark + Roundup Weathermax	1.6 oz + 22 oz	80	18
10. Roundup Weathermax + Indicate	22 oz + 3.5 oz	91	0
11. Roundup Weathermax + AMS	22 oz + 1.2 lb	73	0
12. Roundup Weathermax + AMS	22 oz + 2.2 lb	77	0
13. Untreated	1 fl oz + 4.8 oz	0	0

*Roundup Weathermax 22 oz was applied 1st week of June

Johnsongrass Control in Roundup Ready Flex Cotton

UCCE - Tulare Co. - Tulare - 2006

Steve Wright, Lalo Banuelos, John Soares, Sarah Hutmacher
Anna Brown, Shelly Elam, Sark Davidian

This trial was conducted near Tulare. The treatments were applied to Roundup Ready Flex Phytogen 725RF cotton. Treatments were applied on May 19 and June 20 in 2006. The plot sizes were 2–38 inch rows by 25 feet with three replications.

The first application using the listed treatments were applied over the top on May 19, 2006 using a CO₂ backpack sprayer with 8002 flat fan nozzles at a volume of 15 gpa, a pressure of 40 psi, at 4 mph, using a 3 liter mix size. The temperature at application was approximately 74°F with a wind factor of 0-2 mph. The cotton was in the cotyledon stage at approximately 1.5-2.75 inches tall. The johnsongrass was 3-18 inches tall and the ivyleaf annual morningglory was 1-2 leaf stage.

The second application using the listed treatments were applied over the top on June 20, 2006 using a CO₂ backpack sprayer with 8002 flat fan nozzles at a volume of 15 gpa, a pressure of 40 psi, at 4 mph, using a 3 liter mix size. The temperature at application was approximately 84°F with a wind factor of 0-2 mph. The johnsongrass was 3-22.5 inches tall and the ivyleaf annual morningglory was 2-4 leaf stage.

The trial showed good control for johnsongrass and exceptionally poor results for ivyleaf annual morningglory. As expected, the johnsongrass treatments exhibited excellent control at the 31 days-after-treatment (DAT) stage. After the second application, all johnsongrass control were over 80 percent. The ivyleaf annual morningglory percentages were poor throughout the trial, except for the Roundup treatment. Cotton injury data was taken after the second application and showed zero cotton injury for all treatments.

Table 1.

Johnsongrass Percent Control					
Treatment	Rate pr/A	6 DAT	21 DAT	31 DAT	39 DAT*
1. Prism Max + NIS + Am Sulfate	12 oz + .25% v/v + 2.5 lb	53	40	90	88
2. Prism Max + NIS + Am Sulfate	18 oz + .25% v/v + 2.5 lb	48	43	43	90
3. Prism + COC + Am Sulfate	17 oz + 1% v/v + 2.5 lb	55	27	92	85
4. Prism + COC + Am Sulfate	24 oz + 1% v/v + 2.5 lb	63	80	68	92
5. Fusilade + COC + Am Sulfate	17 oz + 1% v/v + 2.5 lb	52	87	90	95
6. Poast + COC + Am Sulfate	2.5 pt + 1% v/v + 2.5 lb	48	80	93	90
7. Roundup Weathermax	22 oz	88	70	87	82
8. Untreated	--	0	0	0	0

*ratings after treatment B applied

Table 2.

Ivyleaf Annual Morningglory Percent Control			
Treatment	Rate pr/A	6 DAT	39 DAT*
1. Prism Max + NIS + Am Sulfate	12 oz + .25% v/v + 2.5 lb	0	0
2. Prism Max + NIS + Am Sulfate	18 oz + .25% v/v + 2.5 lb	2	0
3. Prism + COC + Am Sulfate	17 oz + 1% v/v + 2.5 lb	3	0
4. Prism + COC + Am Sulfate	24 oz + 1% v/v + 2.5 lb	0	0
5. Fusilade + COC + Am Sulfate	17 oz + 1% v/v + 2.5 lb	0	0
6. Poast + COC + Am Sulfate	2.5 pt + 1% v/v + 2.5 lb	0	0
7. Roundup Weathermax	22 oz	38	68
8. Untreated	--	0	0

*ratings after treatment B applied

Table 3.

Percent Cotton Injury		
Treatment	Rate pr/A	39 DAT*
1. Prism Max + NIS + Am Sulfate	12 oz + .25% v/v + 2.5 lb	0
2. Prism Max + NIS + Am Sulfate	18 oz + .25% v/v + 2.5 lb	0
3. Prism + COC + Am Sulfate	17 oz + 1% v/v + 2.5 lb	0
4. Prism + COC + Am Sulfate	24 oz + 1% v/v + 2.5 lb	0
5. Fusilade + COC + Am Sulfate	17 oz + 1% v/v + 2.5 lb	0
6. Poast + COC + Am Sulfate	2.5 pt + 1% v/v + 2.5 lb	0
7. Roundup Weathermax	22 oz	0
8. Untreated	--	0

*ratings after treatment B applied